REMARKS

Applicants' agent wishes to thank the Examiner for the examination of the above-identified Application.

This response fully addresses the issues raised in the aforementioned Office Action. A detailed discussion of each issue is provided in the sections that follow.

Briefly, this response includes the following items:

1. The listing of inventors on the first page of the specification has been amended to correct the spelling of the family name of the last-named inventor.
2. The single sentence paragraph immediately below the list of inventors' names on the first page of the specification has been amended to include the identifying information relative to the Patent into which the previously recited Application has matured.
3. The paragraph beginning on page 11 at line 13 of the specification has been amended to correct a typographical error by deleting an extraneous word.
4. The paragraph beginning on page 11 at line 28 of the specification has been amended to correct an error in word usage by reciting hysteretic, rather than "hysteric".
5. The paragraph beginning on page 13 at line 25 of the specification has been amended to correct an error in word usage by reciting the singular "is", rather than the plural "are".
6. The paragraph beginning on page 15 at line 17 of the specification has been amended to correct an error in word usage by reciting hysteretic, rather than "hysteric".
7. Claim 1 has been amended in accordance with the Examiner's suggestion to clarify which member is being referenced in the third-listed step.
8. Claim 4 has been amended to eliminate the significance of the order of the step in which the electromagnetic field responsive member is provided, thus making proper the limitation of Claim 7 regarding the order of the steps. Claim 4 has also been amended to clarify that the electromagnetic field responsive member is included in the laminate formed when the second member is provided.
9. Claim 5 has been amended to refer to an element, introduced in the preamble of Claim 4, with a definite article, instead of an indefinite article.
10. Claim 7 has been amended to simplify the wording and thereby more clearly state the limitation in that claim.

11. Claim 13 has been amended to correct a typographical error by reciting that the electromagnetic field responsive member, rather than the conductive means, is removed in the penultimate recited step. The incorrect wording was inadvertently retained from a previous version of the claim.
12. Claim 14 has been amended to make the wording more clear.
13. Claim 16 has been amended to properly refer to a previously introduced member.
14. Claim 17 has been amended to correct typographical errors by reciting that the electromagnetic field responsive member, rather than the barrier member, is disposed in the stated way when the first member is folded, and by reciting that the barrier member, rather than the electromagnetic field responsive member, prevents the joining of the second proximal and distal portions. The incorrect wording was inadvertently retained from a previous version of the claim.
15. Claim 18 has been amended to make the wording more clear.
16. Claim 20 has been amended in accordance with the Examiner's suggestion to properly depend from a claim in which a referenced member is introduced.

No new matter has been added by the aforementioned amendments or arguments.

Terminal Disclaimer

As noted by the Examiner, David Weirich previously agreed to the filing of a Terminal Disclaimer to disclaim the terminal part of the statutory term of any patent granted on the subject application, which would extend beyond the expiration date of the full statutory term of U.S. Patent No. 6,042,673, issued on 28 March 2000 from the parent application of the subject application. Accordingly, this Terminal Disclaimer is herewith submitted in a separate paper.

Claim Objection

The Examiner objected to Claim 7 under 37 CFR 1.75(c) as being of improper dependent form for failing to further limit the subject matter of Claim 4, from which it depends. The Examiner stated that Claim 4 recites, "folding the first member...about the electromagnetic field responsive member", thus requiring folding after the electromagnetic field responsive member is interposed between the opposing first proximal and first distal portions, while dependent Claim 7

removes this limitation by indicating folding before interposing of the electromagnetic field responsive member.

Ordinarily, the steps in a method claim do not have to be performed in the order listed in the claim. See *Bio-Rad Labs., Inc. v. Nicolet Inst. Corp.*, 739 F.2d 604, 614 (Fed. Cir. 1984). The literal language of the claim may, however, dictate that the claimed steps must be performed in the recited order. See *Mantech Envir. Corp. v. Hudson Envir. Svcs., Inc.*, 152 F.3d 1368, 1375 (Fed. Cir. 1998). In the subject application, the specification states at lines 14 and 15 on page 9 that "[i]t should be noted that the scope of the present invention is not intended to be limited by the particular order in which the steps of the method are described." This intention is reinforced with respect to the precise point of this claim objection at line 27 through 29 on page 13, where the specification states that "[a]s stated above, the exact order of the steps of the process is not critical, thus, the electromagnetic field responsive member may be provided before or after the first member is folded." Thus, the clear intention in the subject application is to describe and claim a method in which the order of the steps in the claim is not limiting.

In accordance with this intention, Claim 4 has been amended to delete the reference to folding the first member "about the electromagnetic field responsive member". This claim has been further amended to recite, in a separate step, the action of "providing an electromagnetic field responsive member disposed at least partially between the opposing first proximal and first distal portions of the first member". Hence, in the method of the amended Claim 4, the first member may be folded either before or after the provision of the electromagnetic field responsive member. For example, in an embodiment in which the electromagnetic field responsive member is provided before the first member is folded, the first member may, if desired, be folded about the electromagnetic field responsive member. In another embodiment, the first member may be folded and the electromagnetic field responsive member may afterward be interposed between the folded portions of the first member. The relationship required in the amended Claim 4 is simply that the electromagnetic field responsive member is disposed at least partially between the opposing first proximal and first distal portions of the first member. Whether the electromagnetic field responsive member is so disposed before or after the first member is folded is not significant in the amended claim.

In light of the amendment of Claim 4 described above, the limitation in Claim 7 is proper, in that this limitation narrows the range from either before or after to only "before" the interposition of the electromagnetic field responsive member.

Therefore, applicants' agent respectfully requests that the claim objection be reconsidered and withdrawn.

Claim Rejection Under 35 U.S.C. § 112

The Examiner rejected Claims 1 through 3, 16, and 20 under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as their invention.

In particular, the Examiner suggested inserting –first—before "member" in line 7 of Claim 1 to clarify which member is being referenced. This typographical error has been corrected in the amended Claim 1. Since the Examiner made no comment specifically regarding Claims 2 and 3, which depend from Claim 1, applicants' agent believes that the correction of Claim 1 to resolve the lack of clarity addresses the issue with respect to these two dependent claims.

The Examiner also pointed out that the term "barrier member" in Claim 16 lacks proper antecedent basis. Claim 16 has been amended to correct this typographical error by deleting "barrier member" and reciting "electromagnetic field responsive member", for which proper antecedent basis exists in Claim 13.

Finally, the Examiner pointed out that the term "secondary joining means" lacks proper antecedent basis in Claim 20 and suggested changing the dependency of this claim from Claim 17 to Claim 18, where this term is introduced. The typographical error has been corrected by changing the dependency, as suggested by the Examiner.

Applicants' agent wishes to thank the Examiner for pointing out these typographical errors and for suggesting corrections. The errors have been corrected by amendment of the subject claims. Therefore, applicants' agent respectfully requests that the rejections be reconsidered and withdrawn.

Claim Rejections Under 35 U.S.C. § 103

The Examiner rejected Claims 1 through 5, 7 through 12, and 17 through 20 under 35 USC 103(a) as being unpatentable over Johnson et al. (U.S. Patent 5,662,638) in view of Kohler (U.S. Patent 2,293,541 issued 22 January 1946) and Heller et al. (U.S. Patent 3,574,031 issued 6 April 1971).

The Examiner stated that the "current Application is a CIP and the claims are not supported by any of the parent applications because the new "electromagnetic field responsive member" language is not found in the parent applications. Accordingly, the effective filing date of the current application is the actual filing date, 10 December 1999, and Johnson '638 therefore qualifies as prior art." The Examiner then combined the cited references to arrive at the invention claimed in the subject application.

Applicants' agent respectfully traverses the rejection. Applicants' agent respectfully submits that this Examiner's statement in the immediate parent application's Notice of Allowability that the Johnson et al. '638 Patent is not prior art relative to that application is, likewise, applicable to the subject application. In particular, applicants' agent respectfully submits that the fact that the "electromagnetic field responsive member" language does not appear in the parent applications is not a sufficient basis for a conclusion that the claims of the subject application are not supported by the parent applications. As a fundamental point, the invention claimed in the subject application "does not have to be described in *ipsis verbis* in order to satisfy the description requirement of § 112." *In re Lukach*, 442 F.2d 967, 169 USPQ 795 (CCPA 1971).

Instead, the proper criterion is whether persons skilled in the art would recognize in the disclosure of the parent applications a description of the invention defined by the claims in the subject application. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); MPEP 2163.04. In making this determination, "[t]he primary consideration is factual and depends on the nature of the invention and the amount of knowledge imparted to those skilled in the art by the disclosure." *In re Wertheim* at 262. In the case of a child application, "[t]he test for sufficiency of support in a parent application is whether the disclosure of the application relied upon "reasonably conveys to the artisan that the inventor had possession at that time of the later

claimed subject matter." MPEP 2163.02. In particular, if the disclosure of the parent application, taken together with the knowledge of persons skilled in the art at that time, points to the claim limitations recited in the subject application, then the parent application adequately disclosed the invention. *In re Lukach*; *Electronic Memories & Magnetics Corp. v. Control Data Corp.*, 188 USPQ 448 (ND IL 1975); MPEP 2164.01. This principle that the knowledge of persons skilled in the art at the time is available to the inventors, in addition to the explicit disclosure in the parent application, is consistent with the principle that "[a] patent need not teach, and preferably omits, what is well known in the art." MPEP 2164.01.

In this case, the nature of the invention is that of methods for making flangeless seams in disposable articles, including several steps of providing, folding, superposing, and joining elements. The application that matured into the Johnson et al. '638 Patent disclosed that heat bonding means are suitable for the joining means. Taken together with the knowledge of persons skilled in the art, at that time, regarding electromagnetic heat bonding means, this disclosure is sufficient for persons of ordinary skill in the art to recognize that the applicants invented methods of making the flangeless seams including the use of electromagnetic heat bonding means employed as joining means. Therefore, the claims of the subject application are supported by the parent applications and, in particular, by the great-grandparent application, which matured into the Johnson et al. '638 Patent. It follows that the Johnson et al. '638 Patent does not constitute prior art relative to the subject application. Applicants' agent respectfully submits that this conclusion is apparent in light of the following argument.

The following history is relevant to the subject application:

- Application Serial No. 08/541,377 was filed on 10 October 1995 and matured into the U.S. Patent 5,662,638 issued to Johnson et al. on 2 September 1997 and cited by the Examiner in this rejection.
- Application Serial No. 08/855,651 was a CIP of the '377 Application and matured into U.S. Patent 6,120,489 issued to Johnson et al. on 19 September 2000.
- Application Serial No. 09/034,763 was a CIP of the '651 Application and matured into U.S. Patent 6,042,673 issued to Johnson et al. on 28 March 2000.
- The subject application by Johnson et al. is a CIP of the '763 Application.

The claims of the applications which matured into the '638 and '489 Patents listed above are directed to flangeless seams and disposable articles comprising such seams. Both of these references recite that any suitable joining means may be used. In addition, both references recite specific examples of suitable joining means, including heat bonding means, in particular. No claim to any specific joining means is made in either of these two references.

The claims of both the application that matured into the '673 Patent listed above and the subject application are directed to methods for making the flangeless seams. Both applications describe heat bonding means in which a high frequency electromagnetic field is applied to raise the temperature of materials that are capable of generating heat in response to being exposed to such a field. These electromagnetic heat bonding means were well known in the art at the time of the filing of the application which matured into the Johnson et al. '638 Patent and, specifically, their use in the heat bonding of thermoplastic materials was known. In fact, as noted by the Examiner, these electromagnetic heat bonding means are described in the Kohler and Heller et al. references cited by the Examiner, both of which references predate the application that matured into the Johnson et al. '638 Patent by a number of years.

The application that matured into the '673 Patent particularly describes the subgenus of heat bonding methods in which a conductive material is electromagnetically heated by induced eddy currents and, in ferromagnetic materials, by hysteretic effects. In the subject application, the descriptive term "electromagnetic field responsive member" is used as the name of an element suitable for use in electromagnetic heat bonding methods. This term is clear and unambiguous; a material that responds to exposure to an electromagnetic field by generating heat is an electromagnetic field responsive material and a member comprising such a material is an electromagnetic field responsive member. The class of electromagnetic field responsive materials disclosed in the subject application includes the conductive materials disclosed in the application of the '673 Patent, as well as materials exhibiting a dielectric heating effect in response to exposure to an electromagnetic field.

In summary, the great-grandparent application, which matured into the Johnson et al.'638 Patent, disclosed that heat bonding means are suitable for use as joining means. The subject application, as well as its immediate parent application, describe and claim the use of the subgenus of heat

bonding means in which materials responsive to an electromagnetic field are used. These electromagnetic heat bonding means were well known in the art at the time of the filing of the application of the Johnson et al. '638 Patent. Thus, the claims of the subject application are supported by the disclosure of the great-grandparent application, which matured into the Johnson et al. '638 Patent. Applicants' agent respectfully submits that the Johnson et al. '638 Patent, therefore, does not constitute prior art relative to the subject application.

Accordingly, applicants' agent respectfully requests that the rejection be reconsidered and withdrawn.

Allowable Subject Matter

Applicants' agent wishes to thank the Examiner for the statements regarding allowable subject matter, reasons for allowance, and the potential allowability of Claim 16. As noted above, Claim 16 has been amended to overcome the rejection of this claim.

SUMMARY OF THIS RESPONSE

As previously agreed, a Terminal Disclaimer has been filed to disclaim the terminal part of the statutory term of any patent granted on the subject application, which would extend beyond the expiration date of the U.S. Patent granted from the parent application of the subject application.

Several typographical and word usage errors, in both the specification and claims, have been corrected. The claim objections have been addressed and the claim rejections have been traversed and argued.

No new matter has been added by this response.

In light of the above amendments and remarks, applicants' agent requests that the Examiner reconsider and withdraw the objections and rejections and allow the pending claims. Issuance of a Notice of Allowance at an early date is respectfully requested.

Respectfully submitted,

FOR: LARRY K. JOHNSON ET AL.

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August 3, 2001

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VERSION MARKED UP TO SHOW CHANGES

SUBMITTED IN ACCORDANCE WITH 37 CFR 1.121(b)(1)(iii)

IN RESPONSE TO OFFICE ACTION OF 5 JUNE 2001

IN THE SPECIFICATION

Marked up version of the name of the last-named inventor, listed below the title on the first page of the specification:

[FREDERICK] FREDRICK W. GIBSON

Marked up version of replacement single sentence paragraph immediately below the list of inventors' names on the first page of the specification:

This application is a continuation-in-part of co-pending United States Application Serial No. 09/034,763 filed on March 4, 1998, which matured into U.S. Patent 6,042,673 issued on 28 March 2000.

Marked up version of replacement paragraph beginning on page 11 at line 13:

The electromagnetic field responsive member(s) 205 may include any conductive material or materials, a material or materials such as a polymer having [both] a dipole moment or an ionic charge that responds to an electromagnetic field and a sufficient dielectric loss so that the material will dissipate heat in response to the electromagnetic field, or a combination of these materials. The electromagnetic responsive member(s) 205 may take on any shape, size or configuration suitable for the particular seam to be formed. Further, the electromagnetic field responsive member(s) 205 may be separate elements joined to the first or second member(s) 200 and 202 or a separate member not joined to the first or second members 200 and 202, but merely provided in a position to react to the electromagnetic field while the seam 10 is being formed. Alternatively, the electromagnetic field responsive member(s) 205 may comprise an element or material that is unitary or integrated with at least a portion of the first member 200 or second member 202, such as a material coextruded with the first member 200 or the second member 202, or portion of the first member 200 or second member 202 that has been coated or impregnated to act as an electromagnetic field responsive member.

Marked up version of replacement paragraph beginning on page 11 at line 28 and continuing onto page 12:

Examples of suitable conductive electromagnetic field responsive members 205 include, but are not limited to ferro-magnetic materials, metallic foils and screens such as aluminum, copper and nickel, metallic powders such as bismuth powder and any conductive materials known in the art. (As used herein the term "conductive" refers to materials which increase in temperature when in the presence of eddy currents generated by an alternating current flowing through an electromagnetic coil.) The conductive electromagnetic field responsive members 205 may also be in the form of a composite material such as a solution, adhesive, lotion, film, web, etc. including the conductive material. Some exemplary conductive materials are available from the Ashland Chemical Company under the trade name EMAWELD. Generally, the composition of the electromagnetic field responsive members 205 will be limited only by the particular electromagnetic frequency to be used and intensity of heat which is needed to properly join the first member 200 and the second member 202. The conductive material may also be magnetic which may increase the efficiency of the heating due to an [hysteric] hysteretic loss of the material when it is placed in an electromagnetic field.

Marked up version of replacement paragraph beginning on page 13 at line 25 and continuing onto page 14:

In one preferred embodiment, as shown in Figure 3, once the electromagnetic field responsive member 205 is provided, the first member 200 is folded about the electromagnetic field responsive member 205. (As stated above, the exact order of the steps of the process [are] is not critical, thus, the electromagnetic field responsive member 205 may be provided before or after the first member 200 is folded.) The fold 215 preferably separates the first member 200 into two portions, a first proximal portion 210 and an opposing first distal portion 212. Preferably, the electromagnetic field responsive member 205 is disposed at least partially between the opposing first proximal and first distal portions 210 and 212, as shown in Figure 3. The length of the first proximal portion 210 and the first distal portion 212 is not critical, and either or both may comprise any number of layers and/or folds. In fact, it is recognized that one way to increase the strength of the finished seam is to provide more material in the seam area 250. In an alternative embodiment, the first member 200 is folded about the electromagnetic

field responsive member 205 and at least a portion of the second member 202, as shown in Figure 4.

Marked up version of replacement paragraph beginning on page 15 at line 17 and continuing onto page 16:

The electromagnetic field used to heat the electromagnetic field responsive member 205 may be provided by any means known in the art. In one embodiment, as shown in Figure 9, the electromagnetic field 510 is provided by an induction coil 500. (An exemplary induction coil is the Nova Series induction heating power supply available from Ameritherm, Inc. of Scottsville, NY. Specifically, a NOVA3, 3Kw power supply (220 volts, 60Hz, 3 phase) powering a small pancake style induction coil operating at 393 Khz has been found to be suitable.) The induction coil 500 is placed in the proximity of the seaming area 250 such that the electromagnetic field 510 produced by the coil radiates across the electromagnetic field responsive members 205. While not wishing to be limited by theory, it is believed that the primary mechanism for heating the electromagnetic field responsive member 205 is Joule heating resulting from the decay of a current which is induced in the electromagnetic field responsive member 205 by the external electromagnetic field 510. A secondary heating mechanism is found when magnetic electromagnetic field responsive members 205 are used. The additional heating occurs due to an [hysteric] <u>hysteretic</u> loss in the material at temperatures below the Curie temperature of the material. In either case, the electromagnetic field responsive member 205 is heated to a temperature at which the electromagnetic field responsive member 205 transfers enough heat energy to the surrounding materials to melt or activate the materials, thus, joining them.

VERSION MARKED UP TO SHOW CHANGES

SUBMITTED IN ACCORDANCE WITH 37 CFR 1.121(c)(1)(ii)

IN RESPONSE TO OFFICE ACTION OF 5 JUNE 2001

CLAIMS

1. (Amended) A method of making a flangeless seam by joining two members of a disposable article, the method comprising the steps of:

providing a first member of the disposable article;

folding the first member of the disposable article providing opposing first proximal and first distal portions of the first member;

providing an electromagnetic field responsive member adjacent at least a portion of the first member;

providing a second member of the disposable article juxtaposed at least a portion of the first member to form a laminate including the first member, the second member and the electromagnetic field responsive member; and

applying an electromagnetic field across at least a portion of the laminate to heat the electromagnetic field responsive member to a temperature which joins at least a portion of the first member and at least a portion of the second member.

4. (Amended) A method of making a flangeless seam by joining two members of a disposable article, the method comprising the steps of:

providing a first member of the disposable article;

[providing an electromagnetic field responsive member adjacent at least a portion of the first member;]

folding the first member of the disposable article [about the electromagnetic field responsive member] providing opposing first proximal and first distal portions of the first member[, the electromagnetic field responsive member being disposed at least partially between the opposing first proximal and first distal portions];

providing an electromagnetic field responsive member disposed at least partially between the opposing first proximal and first distal portions of the first member;

providing a second member of the disposable article in a folded configuration juxtaposed at least a portion of the first member to form a laminate including the first member, [and] the second member, and the electromagnetic field responsive member; and

applying an electromagnetic field across at least a portion of the laminate to heat the electromagnetic field responsive member to a temperature which joins at least a portion of the first member and at least a portion of the second member.

5. (Amended) The method of Claim 4 further comprising the step of pulling apart the first member and the second member to form [a] the flangeless seam.

7. (Amended) The method of Claim 4 wherein [the step of folding] the first member [includes folding the first member] is folded before the electromagnetic field responsive member is interposed between the opposing first proximal and first distal portions.

13. (Amended) A method of making a flangeless seam by joining two members of a disposable article, the method comprising the steps of:

providing a first member of the disposable article;

providing an electromagnetic field responsive member adjacent at least a portion of the first member;

folding the first member of the disposable article about the electromagnetic field responsive member providing opposing first proximal and first distal portions of the first member, the electromagnetic field responsive member being disposed at least partially between the opposing first proximal and first distal portions;

providing a second member of the disposable article in a folded configuration having [a] opposing second proximal [portion] and [a] second distal [portion] portions, at least a portion of the second distal portion being juxtaposed at least a portion of the first member to form a laminate including the first member, the second member and the electromagnetic field responsive member;

[providing] applying an electromagnetic field across at least a portion of the laminate to heat the electromagnetic field responsive member to a temperature which joins at least a portion of the first distal portion, the second distal portion and the second proximal portion, the

electromagnetic field responsive member [also] preventing the joining of the first proximal portion with the first distal portion;

removing the [conductive means] electromagnetic field responsive member; and

pulling apart the first proximal portion and the first distal portion to form [a] the flangeless seam.

14. (Amended) The method of Claim 13 further including the step of providing a secondary joining means across at least a portion of the laminate.

16. (Amended) The method of Claim 14 wherein the [barrier] electromagnetic field responsive member prevents the secondary joining means from joining the first proximal portion with the first distal portion.

17. (Amended) A method of making a flangeless seam by joining two members of a disposable article, the method comprising the steps of:

providing a first member of the disposable article;

providing an electromagnetic field responsive member adjacent at least a portion of the first member;

folding the first member of the disposable article about the electromagnetic field responsive member providing opposing first proximal and first distal portions of the first member, the [barrier] electromagnetic field responsive member being disposed at least partially between the opposing first proximal and first distal portions;

providing a second member of the disposable article in a folded configuration [defining] having opposing second proximal and second distal portions, at least a portion of the second distal portion being juxtaposed at least a portion of the first member to form a laminate including the first member, the second member and the electromagnetic field responsive member;

providing a barrier member between the second proximal portion and the second distal portion;

[providing] applying an electromagnetic field [means] across at least a portion of the laminate to heat the electromagnetic field responsive member to a temperature which joins at least a portion of the first member and the second member, the [electromagnetic field

responsive] barrier member preventing the joining [means from joining] of the second proximal portion with the second distal portion;

removing the barrier member; and

pulling apart the second proximal portion and the second distal portion to form [a] the flangeless seam

18. (Amended) The method of Claim 17 further including the step of providing a secondary joining means across at least a portion of the laminate.

20. (Amended) The method of Claim [17] 18 wherein the barrier member prevents the secondary joining means from joining the first proximal portion with the first distal portion.